

COMPARATIVE CALCULATION

A yield comparison of a solar park in Megalohori, Greece



DEGERTRACKER 8.5 | MEGALOHORI | GREECE

REFERENCE PROJECT & YIELD COMPARISON

Yield comparison from January 2016 - December 2016

BASIC INSTALLATION DATA			SYSTEM CONFIGURATION		
Plant name:	Gousios 19.80@ Megalohori		Installed capacity:	19.8 kWp	
Location:	Trikala, Greece		Number of tracker:	18x DEGERtracker 8.5 (single-axis)	
Longitude:	21° 45' 36" E		Number of modules:	90 modules	
Latitude:	39° 33' 41" N		Number of inverters:	3x Mini Central 7000TL	

SMA REFERENCE: 18X DEGERTRACKER 8.5 WITH PATENTED MLD TECHNOLOGY FROM DEGER*

Month	kWh total	kwh/kWp
January	2.055,19	103,80
February	2.439,59	123,21
March	2.894,17	146,17
April	4.034,86	203,78
May	3.952,82	199,64
June	4.370,96	220,76
July	4.686,46	236,69
August	4.322,80	218,32
September	3.160,29	159,61
October	2.479,87	125,25
November	1.834,98	92,68
December	2.046,08	103,34
Total	38.278,07	1.933,25

* Average values 2009 - 2017:
Yearly energy production total: 38,35 MWh.
Yearly specific yield: 1.923 kWh/kWp

MODELED DATA: SINGLE-AXIS ASTRONOMICAL CON- TROLLED IN THE SAME LOCATION**

Month	kWh total	kwh/kWp
January	1.514,80	76,51
February	1.802,90	91,06
March	2.684,45	135,58
April	3.382,89	170,85
May	3.797,88	191,81
June	4.340,15	219,20
July	4.494,77	227,01
August	4.189,07	211,57
September	3.224,49	162,85
October	2.250,95	113,68
November	1.577,41	79,67
December	1.389,73	70,19
Total	34.649,51	1.749,98

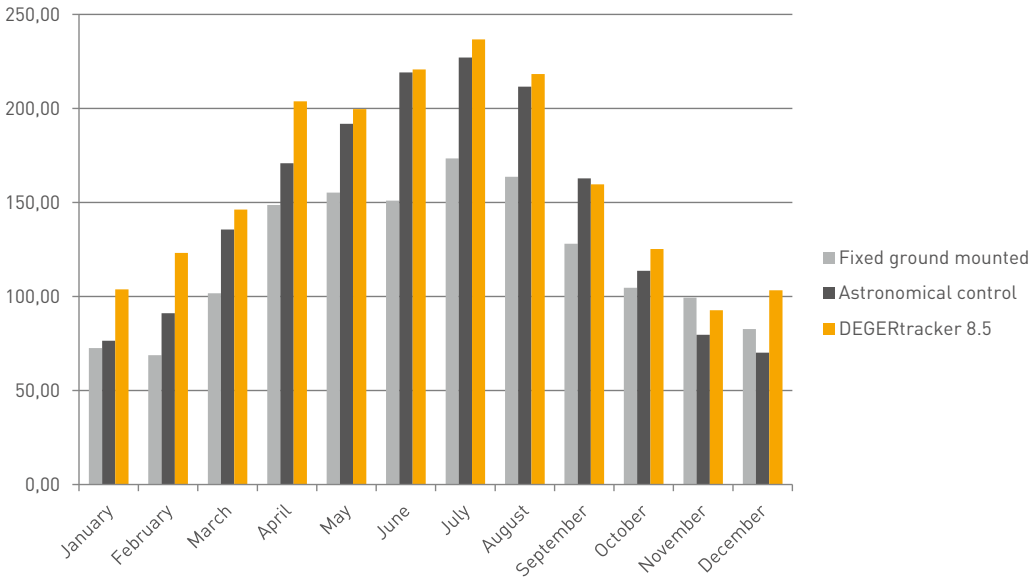
** based on real data with PVsyst verification

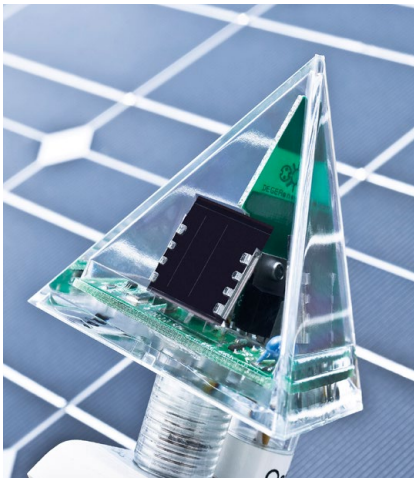
MODELED DATA: FIXED GROUND MOUNTED IN THE SAME LOCATION**

Month	kWh total	kwh/kWp
January	1.437,12	72,58
February	1.361,05	68,74
March	2.014,88	101,76
April	2.943,83	148,68
May	3.074,92	155,30
June	2.989,14	150,97
July	3.434,20	173,44
August	3.241,61	163,72
September	2.536,00	128,08
October	2.071,52	104,62
November	1.967,95	99,39
December	1.636,18	82,64
Total	28.708,38	1.449,92

** based on real data with PVsyst verification

GRAPHIC EVALUATION





THE NUMBERS SPEAK FOR THEMSELVES:

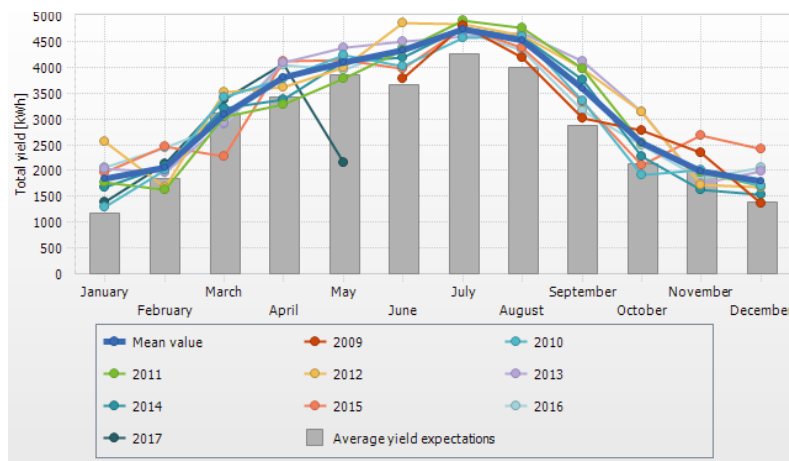
With the patented MLD technology, single-axis EGERackers generates an average of 10 percent more energy than astronomical tracking systems and even up to 30 percent more than fixed tilt solar modules.

Thanks to the very good irradiation values of 1,543 kWh/m² in Megalohori, the actual higher yield with the DEGERtracker 8.5 is even higher:

- + 10.5% compared to astronomically tracked systems
- + 33.3% compared to fix tiled solar modules

Maximum Light Detection principle is based on the most accurate, fastest and most energy-saving tracking of the solar module toward the maximum energy point. That function is the responsibility of the patented control module, the MLD sensor. The control module continually measures intensity and angle of the incoming light and moves the solar module installation into the most advantageous position. The module not only takes the solar irradiation into account, but also, for example, light that is reflected off snow, water or light-colored rock, or diffuse solar irradiation that penetrates the clouds – and does so individually for each system. What is important here: only those movements that will result in a direct yield increase are carried out

SMA ANNUAL COMPARISON: MEGALOHORI FROM 2009 TO 2017



Total yield [kWh]	January	February	March	April	May	June	July	August	September	October	November	December	Total
2009						3779.06	4818.26	4194.01	3003.43	2784.98	2349.76	1354.42	22283.92
2010	1293.06	2017.19	3428.37	3769.29	4241.65	4026.47	4577.67	4589.19	3338.02	1921.33	2018.12	1700.36	36920.72
2011	1765.08	1628.85	3027.51	3278.29	3791.67	4324.72	4905.80	4772.48	3976.98	2532.43	1972.19	1691.28	37667.28
2012	2554.52	1682.20	3522.86	3614.24	3992.28	4849.04	4831.96	4615.50	3982.72	3125.25	1718.27	1674.59	40163.43
2013	2038.13	1955.04	2923.21	4095.08	4380.22	4505.41	4585.39	4662.12	4108.43	3129.03	1741.28	1989.36	40112.69
2014	1670.14	2083.80	3207.97	3382.90	4120.38	4183.02	4765.11	4587.00	3746.55	2263.83	1618.90	1537.26	37166.43
2015	1972.10	2467.81	2265.39	4118.23	4147.99	3975.73	4751.70	4387.98	3332.24	2114.27	2671.66	2409.03	38614.10
2016	2055.19	2439.59	2894.17	4034.86	3952.82	4370.96	4686.46	4322.80	3160.29	2479.87	1834.98	2046.08	38278.06
2017	1388.72	2126.29	3370.08	4067.30	2161.98								13114.37
													304321.01
Mean value	1842.12	2050.10	3079.94	3794.97	4089.57	4319.33	4740.29	4516.38	3581.08	2543.87	1990.64	1800.30	38348.61
Year portion	4.80%	5.35%	8.03%	9.90%	10.66%	11.26%	12.36%	11.78%	9.34%	6.63%	5.19%	4.69%	100.00%
Yield expectations *	1174.73	1831.10	3110.18	3419.86	3847.34	3652.11	4261.36	3985.34	2877.93	2134.04	1982.57	1383.43	33660.00
Commissioning: 04/06/2009													

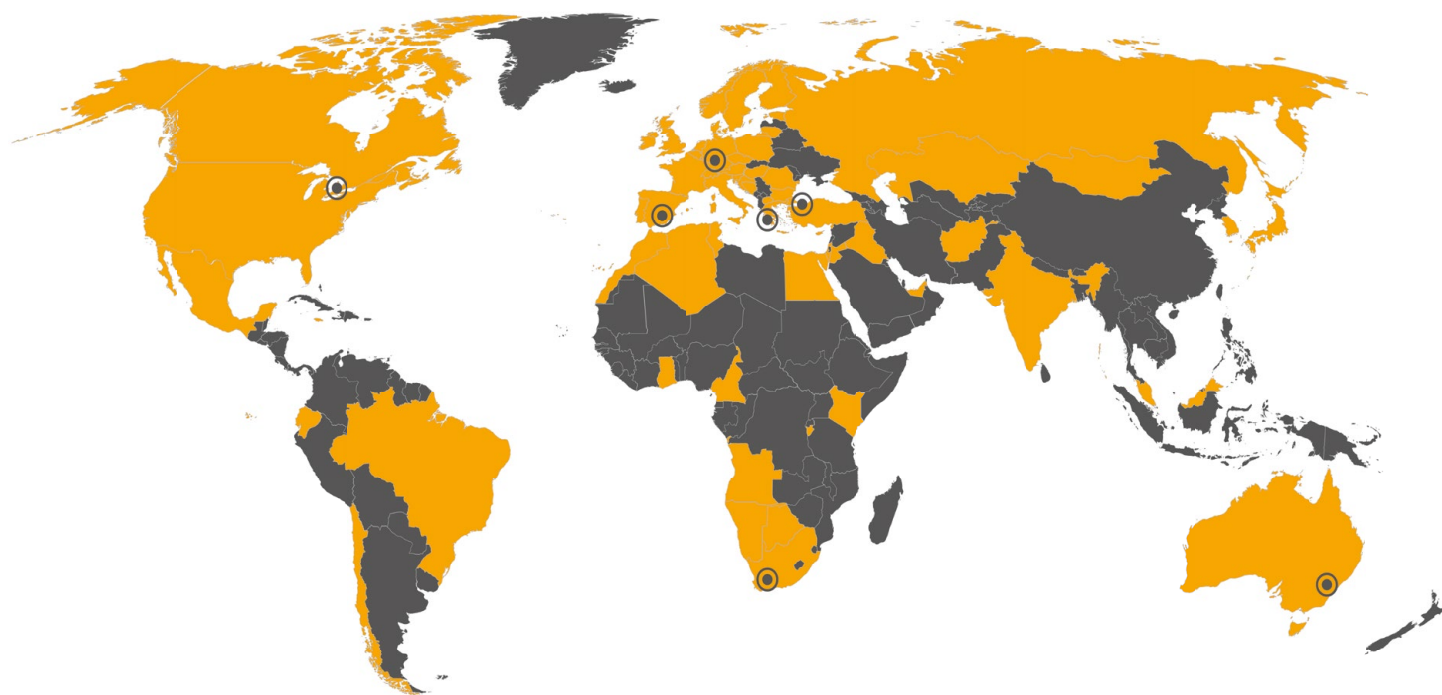
* The expected average yield results from a manual specification. Depending on the orientation and the irradiation fluctuations between the individual years, there might be considerably larger deviations in contrast to the expected average yield.

ABOUT DEGER

DEGER is the leading manufacturer with the world's largest product portfolio for single and dual axis solar tracking systems. Its market position is based on the unique, patented "Maximum Light Detection" or MLD technology. The MLD-sensor constantly aligns the connected solar modules to the point that provides the greatest energy and achieves a 45% greater yield on average than fixed systems. With more than 75,000 projects installed in 64 countries, DEGER is world's market and technology leader for tracking systems.

DEGER was founded in 1999 in Germany. In 2005 DEGER opened its first branch office in Spain, in 2009 the branch office in Greece followed. In 2011 a branch office was opened in Australia, 2014 in South Africa and 2015 in Canada, Egypt and Turkey. DEGER produces in Germany, Turkey, Canada and South Africa. On request, DEGER offer assistance in project financing and EPC businesses.

WE ARE AT YOUR SERVICE.
WORLDWIDE.



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- Installed DEGER systems

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